

REMARKS

The Examiner is thanked for indicating that claim 44 is allowable.

Claims 27-42, 44, and 52-55 are pending in the instant application. Claims 27-42, and 52-54 presently stand rejected. Claims 27, 37, and 55 are amended herein. Entry of this amendment and reconsideration of the pending claims are respectfully requested.

Claim Rejections – 35 U.S.C. § 102

Claims 27, 28, 30-34, 36-39, 42, and 52-55 stand rejected under 35 U.S.C. § 102(b) as being anticipated by A.M. Weiner, et al., "Spectral holography of shaped femtosecond pulses" ("Weiner").

A claim is anticipated only if each and every element of the claim is found in a single reference. M.P.E.P. § 2131 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). "The identical invention must be shown in as complete detail as is contained in the claim." M.P.E.P. § 2131 (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226 (Fed. Cir. 1989)).

Amended independent claim 27 now recites, in pertinent parts,

(b) an ordered assemblage of subgratings ... for receiving input pulses along **an input path** and transmitting output pulses along **angularly distinct output paths**, wherein

...
(2) the subgratings are configured such that (i) a first input optical pulse, incident to the active material along the input path and having a first temporal waveform substantially similar to one of a plurality of address temporal waveforms encoded in the subgratings ... produces an output optical pulse having a prescribed output temporal waveform and **selectively propagating along one of the output paths dependent upon which one of the plurality of address temporal waveforms the first temporal waveform is substantially similar to...**

Applicants respectfully submit that Weiner fails to disclose transmitting output pulses along **multiple angularly distinct output paths** based on input pulses along a **single input path**. Furthermore, Applicants respectfully submit that Weiner fails to disclose that an output path of an output optical pulse is selected dependent upon which one of a plurality of address temporal waveforms of the subgratings the input pulse matches.

Simply put, Weiner does not disclose routing output pulses along angularly distinct output paths in response to input pulses all along a single input path, based on matching a temporal waveform of the input pulses to one of several temporal waveforms encoded within the subgratings.

The Examiner stated,

Although Weiner, et al discuss simultaneously correlating a single input with a plurality of matched filters simultaneously, and although it is understood that a plurality of outputs will obtain where there is correlation with a plurality of filters, *the subgratings nonetheless produce the prescribed output pulse along at least one of the output paths when the input pulse is substantially similar to at least one of the stored waveforms.*

Office Action mailed October 17, 2003, page 5, lines 13-18. However, Applicants are unable to find reference within Weiner to multiple output paths, nor angular distinct output paths. Weiner certainly does not disclose generating output pulses along angularly distinct output paths from input pulses along a single input path.

Weiner does disclose,

Note that the liquid-crystal modulator used to control the signal waveform can be reprogrammed before readout. Thus a test beam along k_s can be set to the original signal waveform, to a short 75-fs-pulse, or to a new and different waveform.

Weiner, page 225, bottom of left column to top of right column. Thus, this portion of Weiner discloses using various different test beams. Weiner further discloses,

Figure 2(a) shows real reconstructed pulses read out with $k_t = k_r$. The pulse arrival times are identical to those of the original single pulses. Figure 2(b) shows measurements of time-reversed pulses read out with $k_t = k_s$. The pulse arrival times are now opposite those of the original signal pulses.

Weiner, page 225, middle of right column. This portion of Weiner discloses identical and time reversed output pulses. However, Weiner fails to disclose or even mention angularly distinct output paths or selectively routing output pulses along angularly distinct output paths.

Finally, Weiner also discloses,

The **spectral resolution** is determined by the angular dispersion of the gratings and the **divergence of the input beam** and can be improved by increasing the angular dispersion and the input beam size.

Weiner, page 225, middle of right column (emphasis added). However, determining spectral resolution based on angular dispersion of gratings and improving divergence of an input beam based on angular dispersion of an input beam are very different concepts from selectively propagating output optical pulses along angularly distinct output paths. This portion of *Weiner* also fails to disclose the bolded portions of claim 27.

Consequently, *Weiner* fails to anticipate each and every element of claim 27, as required under M.P.E.P. § 2131. Accordingly, Applicants request that the instant § 102 rejection of claim 27 be withdrawn.

Amended independent claim 37 now recites, in pertinent part, “a composite grating for receiving light pulses along **an input path** and transmitting light pulses to the detector along one of a plurality of **angularly distinct output paths....**” For the reasons discussed above in connection with claim 27, Applicants respectfully request that the instant § 102 rejection of claim 37 be withdrawn.

Amended independent claim 55 now recites, in pertinent part, “a composite grating to receive the input optical pulse along **an input path** and to transmit, in response thereto, an output optical pulse along one of multiple **angularly distinct output paths....**” For the reasons discussed above in connection with claim 27, Applicants respectfully request that the instant § 102 rejection of claim 55 be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Claims 29, 35, 40, and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Weiner*.

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art.” M.P.E.P. § 2143.03.

Dependent claims 28- 36, 38-42, and 52-54 are patentable over the prior art of record for at least the same reasons as discussed above in connection with their

respective independent claims, in addition to adding further limitations of their own. Accordingly, Applicants respectfully request that the instant § 102 and § 103 rejections for claims 28- 36, 38-42, and 52-54 be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.

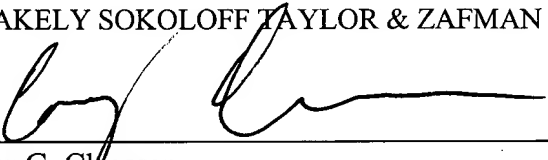
CHARGE DEPOSIT ACCOUNT

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). Any fees required therefore are hereby authorized to be charged to Deposit Account No. 02-2666. Please credit any overpayment to the same deposit account.

Respectfully submitted,

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

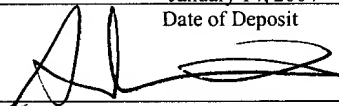
Date: Jan. 14, 2004


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